European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.7, No.6, 2015
www.iiste.org

Barriers to Technological and non-Technological Innovation Activities in Malaysia

Musibau Akintunde Ajagbe*[1] Kamariah Ismail[2], David T. Isiavwe[3] and Mercy I. Ogbari[4]
1 Center for Entrepreneurship Studies, Department of Business Management, Covenant University, Canaan Land, Ota, Nigeria.
2 UTM Technology Entrepreneurship Centre, Universiti Teknologi Malaysia, Skudai, Malaysia.
3 Department of Accounting, Igbinedion University, Okada, Nigeria.
4 Department of Business Management, Covenant University, Canaan Land, Ota, Nigeria.
[1*]E-mail of corresponding author: akintunde.ajagbe@cu.edu.ng & ajagbetun@yahoo.com

Abstract
The complication of innovation activities has resulted to a massive increase in the adoption of external networks by Small, Medium to Large (SML) firms. The main objective of this study is to investigate the barriers to technological and non-technological innovation activities in SML firms both in the service and manufacturing sectors in Malaysia. It was reported that the gathering and distribution of data on innovation activities of a nation is unquantifiable to the prosperity and development of that nation. However, National Innovation Survey (NIS) in Malaysia dates back to the initial survey carried out in 1994 to gather data on innovation activities among SML firms in areas such as inventions, product developments, process creation, development and organizational change. The research philosophy adopted was multiple regression analysis executed on the collected interview data. Aside that, T-tests was also used to compare the means of variables between the randomly chosen domestic and foreign companies. In this research, the data was analyzed using Statistical Product and Service Solution (SPSS) version 18. Descriptive data analysis were used to explain the findings and were presented in the forms of tables and figures to describe the amount of innovation activities and the barriers to innovation activities in both the manufacturing and services sectors.
Keywords: Technology Innovation, Small Medium & Large Firms, Organizational Learning, Knowledge Management, Malaysia

1. Introduction

Khairuddin (1999) reported that the gathering and distribution of information on innovation activities of a country are immeasurable to the success of its growth and development. He added that the National Innovation Survey (NIS) in Malaysia dates back to the first NIS-1 carried out about two decades ago to gather data on discoveries, product developments, process creation, development and organizational change (Davis 2000; Cox *et al.* 2002; Ajagbe 2014). In view of this, it is essential to collect data pertaining to innovation activities in both manufacturing and service sector for NIS-6 carried out between 2009-2011. This study will also make available benchmark for future investigation on innovation in other industrial sectors. However, benchmarking of the various innovation activities across the Small Medium to Large (SML) firms were also included in this research to highlight the degree of innovation attendants in various industries. Previous researchers such as Chesbrough *et al.* (2007), Beer & Nohria (2000) and Ajagbe (2014) pointed out that though Malaysia has attained certain level of economic prosperity, there is opinion in some quarters that the amount of innovation activities in SML organizations is still under-researched. This mindset is also similar with Sta. Maria (2000) and Khairuddin (1999). Empirical literature revealed that a huge body of studies exists on creativity in general, but such studies have failed to connect with innovation activities in the real sense of the case (Axtell *et al.* 2000; Ajagbe *et al.* 2013). In addition, they agree that large body of studies are available on innovation, with 3,085 published articles on the diffusion of innovation among of which 2, 297 are empirical research (Barthelomew & Smith 2006; Eveleens 2010), surprisingly, advanced frameworks and philosophies on innovation has not been put forward (Ee Shiang & Nagaraj 2011; Ajagbe & Ismail 2014). In essence this present study indicate the need for more studies connecting constructs of innovative activities so as to understand their influence on innovation within small medium to large organizations in the perspective of Malaysia. Invariably, Innovation is identified as the main factor for attaining competitive performance of companies and rising economic prosperity of countries. Ajagbe & Ismail (2014) opine that speedy technological advancement, booming international competition and shorter product life cycles have augmented the pressure on companies to innovate. Miozzo & Wlsh (2006) argue that empirical findings indicated that companies that are innovative perform better in areas of product output, profitability or increase in employment than those without innovation. Though, the susceptibility of the companies' detachment with innovative practices is a result of the barriers and risks linked with the process of innovation (WIPO 2012; Ismail & Ajagbe 2013). Although, Innovation comes in different dimensions for example product, services, organizational and process innovation. Drucker (1988) mentioned business model innovation as an alternative instrument to measuring the degree of innovation activities in business organizations.

Considering various opinion on what the term innovation means to different authors, they have defined innovation in their own unique perspectives as shown in Table 1 below. Past authors have indicated that innovation generates new ideas and develops unique products, services or business model. However, recent publications show innovation process to be an inculcation of adoption, implementation and commercialization of such discovery (GII 2012; GCR 2013; Ajagbe & Ismail 2013a; Ajagbe & Ismail 2014). Encouraging innovative working atmosphere within an organization, and linking such to satisfactory atmosphere encourages a culture that will boost organizational power is a mindset that has been suggested since the early 1980's by these authors IDR (2011), Ekvall & Tangeberg-Anderson (1986), Cox *et al.* (2002), OECD (2005; 2010). In a different dimension, the atmosphere of a business organization is perceived as a characteristic of the firm, a combination of characteristics, feelings and behaviors which reflects life in companies and exists independently of the perspectives of the organizational team (Geroski *et al.* 1993; Gellatly *et al.* 1999). Innovation is further viewed as a process of thinking ahead which helps to generate unique knowledge (Majaro 1992; Ajagbe 2014). Research relating to innovation activities has also exposed some human, social and cultural dimensions that are necessary for effective operation of innovation at the level of the firm (Mohanty 1999; NECA 2010; Ajagbe & Ismail 2013b; Ajagbe & Ismail 2013a). The constructs as put forward by OECD (2010) are usually directed around learning by organizations as a whole which is essential to the company's innovative potentials.

Nonaka and Takeuchi (1995) mentioned that the concept of learning at organizational level and knowledge management has been closely associated with innovation since the end of the 1990s. Adopting the neo-Schumpeterian model (Oslo Manual 2005; GII 2012; Ajagbe & Ismail 2013a) viewed innovation in terms of an interface between market potentials and the firm's knowledge base and capabilities. However, innovation is the process of creating commercial products (or services) from inventions. It involves both technological and non-technological innovation. The non-technological innovation described in this study relies on firm innovation particularly in SML organizations in Malaysia. It is included together with technological innovation (TI) since company innovation occurs as part of technological innovation (Barthelomew & Smith 2006; Ajagbe & Ismail 2013b). The main objective of this research is to find out the degree of technological and non-technological innovative activities existing in SML organizations in Malaysia and further expose some of the barriers hindering some firms from engaging in innovation activities that could help to improve organizational performance and the economy as a whole. This includes manufacturing organizations and services organizations in the 14 states in Malaysia as considered in this study.

Table 1 Definition of Innovation

No	Definition	Author
1	Industrial innovation is the technical design, manufacturing, management and commercial activities involved in the marketing of a new or improved product or the first commercial use of a new or improved process or tool.	Freeman (1982)
2	Innovation is the particular instrument of entrepreneurs, the avenues through which they exploit change as an opportunity for a different business or service.	Drucker (1985)
3	Innovation is the "successful exploitation of new ideas".	UK DTI (2004)
4	Successful innovation is the design and adoption of new processes, products, services and techniques of delivery which lead to huge improvements in outcomes, efficiency, effectiveness or quality.	Albury (2005)
5	Innovation is "the successful development, adoption and use of new or structurally improved products, processes, services or organizational forms".	Hartley (2006)
6	Innovation is "something new being created hopefully with improved value".	Jacobs & Snijders (2008)

2. Research Philosophy

This survey collected primary and secondary data through self-administered questionnaire while the secondary data were obtained from the archive of public organizations and international manual book such as National Survey of Innovation 2005-2008, Oslo Manual (2005), World Competitiveness Yearbook (WCY), Global Competitiveness Index (GCI), Global Innovation Index (GII) and data that are related from different public organizations official web portal. The secondary information collected where gathered for the purpose of carrying out an international benchmark. The population in this study included all manufacturing and service sectors as recorded in the Economic Census 2011 Report published by the Department of Statistics Malaysia (DOSM) which amounts to 631,552 companies. The companies also fall under the 3- digit level of new

Malaysian Standard Industrial Classification 2008 version 1.0 (MSIC). The population includes companies that have 1-InnoCert recognition totaling 97 companies. For the manufacturing sector, the survey covered establishments which fall under the category of small, medium and large scale industry. Smaller establishments with less than five employees or less than RM200, 000 turnovers were excluded. This was due to the fact that previous innovation surveys indicated that the percentage of innovation in the smaller establishments was very small. This is also in line with recommendations in the Oslo Manual. The coverage for the services sectors followed the same line where small industries were excluded after consultation with the Department of Statistics Malaysia.

In order to obtain a higher rate of response from the participants, a total of 5293 questionnaires were sent to the participants in both the manufacturing and services industry in all the 14 states in Malaysia. Out of the number of questionnaires sent out, about 2006 sets of questionnaires were received constituting 38% of response rate, among these about 84% of these questionnaires received were usable for the purpose of this study. The details of the questionnaires distributed, received and usable are shown in Figure 1 below. Also of the total of 1682 companies surveyed, result of data collection showed that 1178 companies are innovative while 504 companies are non-innovative. This indicates that 70% of the respondents are innovative companies as compared to 30% of non-innovative companies respectively as indicated in Figure 2 below from the survey that was carried out.

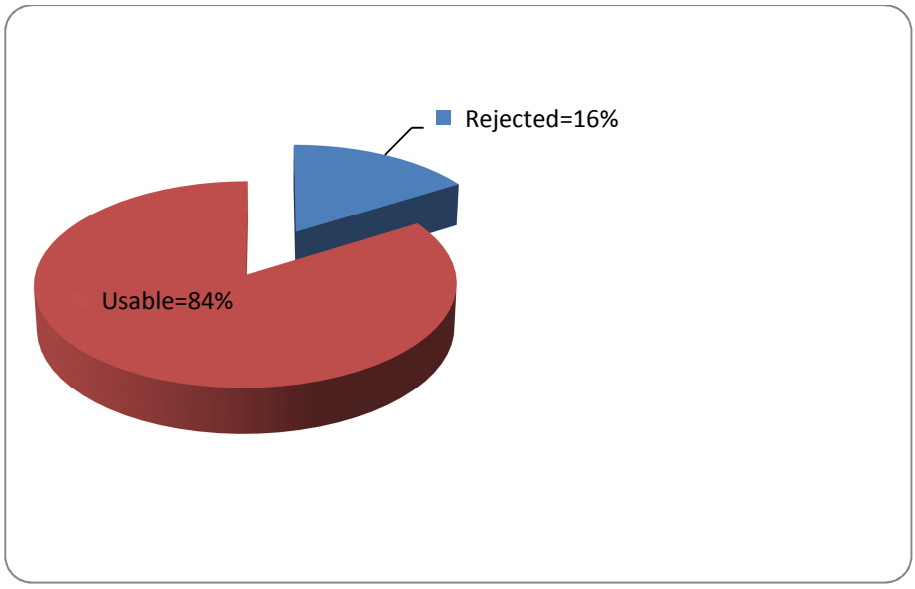

Figure 1. Questionnaires Distributed

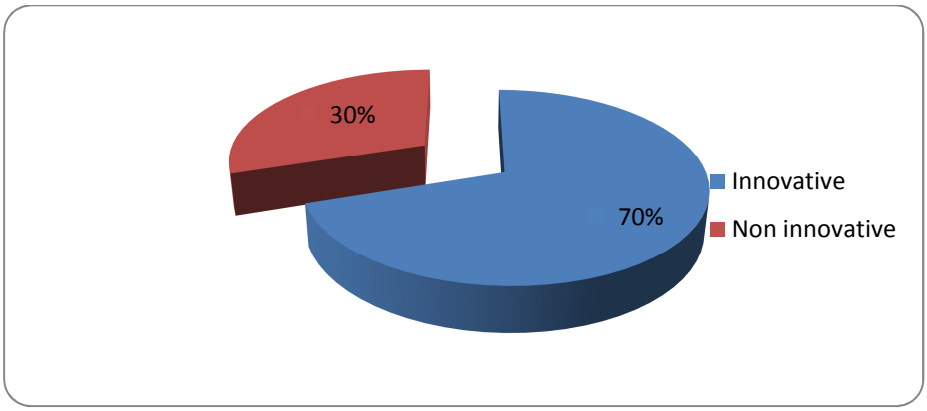

Figure 2. Innovative and Non-Innovative Firms

3. Data Analysis and Findings

3.1 Innovative and Non-Innovative Respondents Based on States

Result from this analysis show that innovation activities occur in almost all states of the federation with response reflecting innovative and non-innovative firm's activities as indicated in Table 2. The analysis as compiled in a tabular form indicate that the most innovative state in Malaysia is Selangor (22.50%), followed by Kuala Lumpur (11.29%) and Sarawak (10.27%), while the lowest response rate was from Perlis (1.61%). As for innovative respondents the highest response came from Perak (85.33%) while the highest non innovative response came from Perlis (54.29%), followed by Melaka (56.41%), and Pahang (56.72%). However, considering the findings from this analysis, it is not surprising that Selangor has been reported to be the most innovative state followed by Kuala Lumpur, this may not be unconnected to the fact that these two states are regarded as the economic nerve centre of the country with huge presence of both public and private industries that are involved in innovation activities as a means of growing the performance of their organizations and beating competition.

Table 2. Innovative and Non-Innovative Firms Based on States

States	Innovative	%	Non-Innovative	%	Total	Innovative Response*
	N		N		N	%
Kelantan	21	1.78	15	2.98	36	58.33
Perak	64	5.43	11	2.18	75	85.33
Perlis	19	1.61	16	3.17	35	54.29
Melaka	22	1.87	17	3.37	39	56.41
Kedah	69	5.86	21	4.17	90	76.67
Negeri Sembilan	74	6.28	22	4.37	96	77.08
Terengganu	66	5.60	49	9.72	115	57.39
Pulau Pinang	71	6.03	36	7.14	107	66.36
Pahang	38	3.23	29	5.75	67	56.72
Sabah	103	8.74	51	10.12	154	66.88
Johor	112	9.51	47	9.33	159	70.44
Sarawak	121	10.27	63	12.50	184	65.76
Kuala Lumpur	133	11.29	54	10.71	187	71.12
Selangor	265	22.50	73	14.48	338	78.40
TOTAL	**1178**	**100**	**504**	**100**	**1682**	

*Percentage of innovative respondents over total respondents (innovative/total x 100%)

3.2 Innovative and Non-Innovative Firms Based on Industry

The grouping of innovative and non-innovative activities based on industry is revealed in Figure 3. Depending on the number of participants from the manufacturing (Figure 4) and services (Figure 5) industry, most of the innovative participants are from the services industry with 62%, while others are from the manufacturing industry with 38% response rate. On the other hand, the most non-innovative firms emanate from the manufacturing industry with 58% as compared to the service industry with 42% response rate.

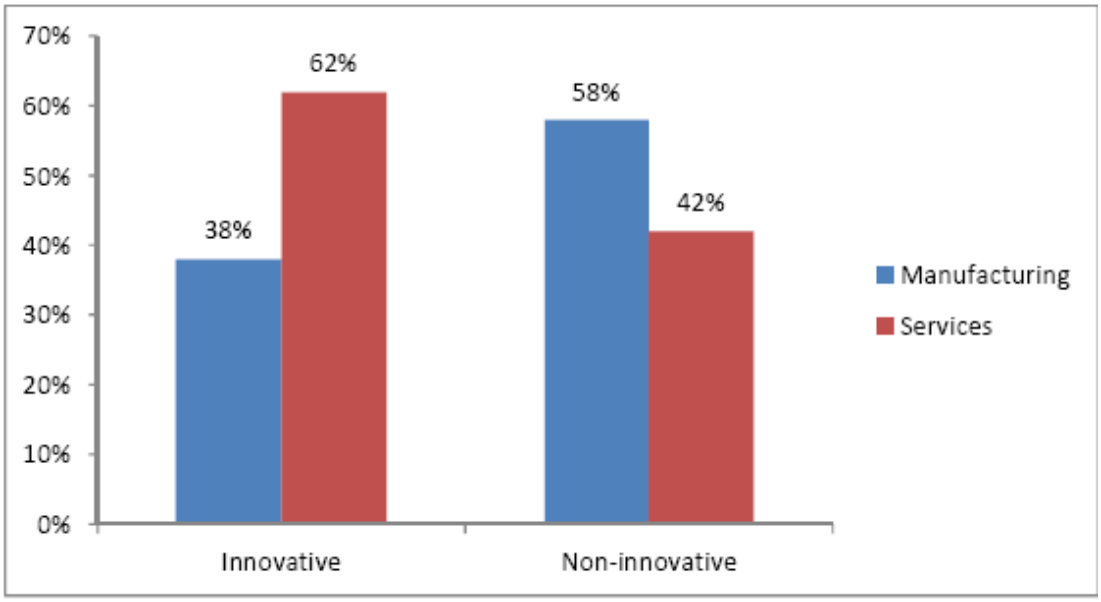

Figure 3. Innovating and Non-Innovating Firms Based on Business Industry

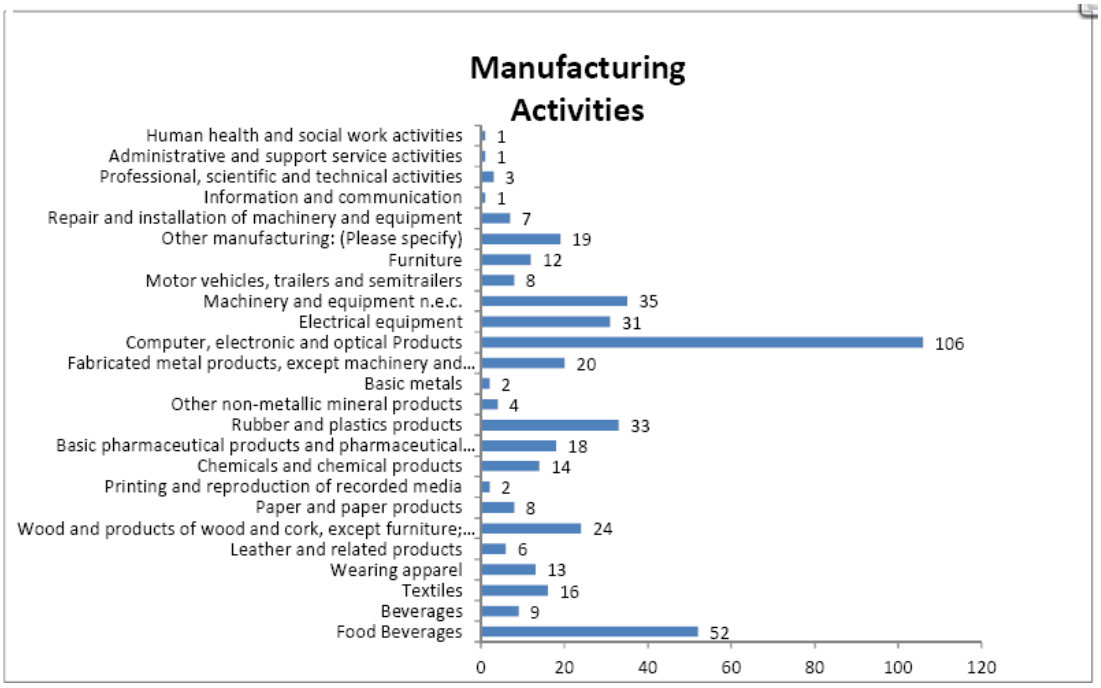

Figure 4. Firm's Activities Based on Industry (Manufacturing)

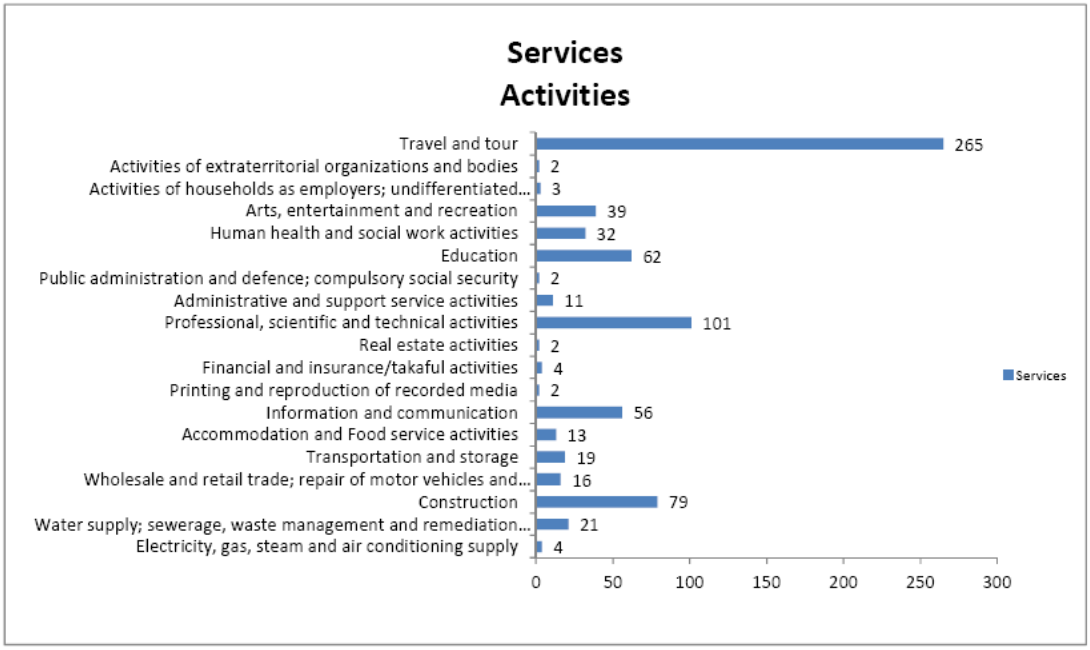

Figure 5. Firms Activities Based on Industry (Services)

3.3 Barriers to Innovation Activities in Malaysia

This result from this survey revealed that several factors have been attributed to hinder the innovation activities of both manufacturing and services organizations in Malaysia. As shown in Table 3 below, the barriers to innovation activities in the manufacturing industry are cost too high with mean (2.16), lack of fund within the organization with mean (1.93), and uncertain demand for goods and services with mean (1.81). While, in the service industry, the most hindering factor are cost too high with mean (1.74), lack of fund within the organization with mean (1.71), and lack of finance from outside sources with mean (1.67). The result shown in this table indicates that there are almost similar factors that hinder the innovation activities in both the manufacturing and services industry in Malaysia. The only difference seen in this study is just a slight variation in those factors between the manufacturing and services industry.

Table 3. Barriers to Innovation Activities

Relative Factors hampering innovation activities		Sector	
		Manufacturing	Services
		Mean	Mean
Cost factors	Cost too high	2.16	1.74
	Lack of funds within the organization	1.93	1.71
	Lack of finance from sources outside the organization	1.77	1.67
	Excessive perceived risk	1.65	1.51
	Average mean	1.88	1.66
Knowledge factors	Lack of qualified personnel	1.79	1.65
	Lack of information on technology	1.46	1.39
	Lack of information on markets	1.49	1.40
	Difficulties in finding cooperation partners for innovation	1.54	1.39
	Weakness of intellectual property knowledge and rights	1.40	1.35
	Average mean	1.54	1.44
Market factors	Market dominated by established enterprise	1.75	1.32
	Uncertain demand for innovative goods and services	1.81	1.30
	Innovation is easy to imitate	1.60	1.18
	Average mean	1.72	1.27
Organisational factors	Attitude of personnel towards change	1.66	1.54
	Attitude of managers toward change	1.59	1.32
	Managerial structure of enterprise	1.48	1.30
	Inability to devote staffs to innovation activities due to production requirement	1.41	1.30
	Lack of infrastructure (eg building)	1.41	1.21
	Lack of facilities (eg. Machine, equipment)	1.62	1.34
	Lack of networking with research institutions (eg. Universities, SIRIM, PORIM, FRIM, etc.)	1.37	1.13
	Average mean	1.51	1.31
Regulatory factors/ public policy	Insufficient flexibilities of regulation or standards	1.32	1.12
	Limitation of science and technology public policies	1.07	0.93
	Average mean	1.20	1.03
Other factors	No need to innovate due to earlier innovations.	0.76	0.71
	No need because lack of demand for innovation	0.69	0.84
	Average mean	0.73	0.78

** Mean indicator: 0 = not relevant – 3 = highly important*

4. Discussions and Suggestions

4.1 Cost Factors

This study provides a comprehensive review on the innovation activities of SML firms across the states in Malaysia. Therefore, it is under this context that the current study has been undertaken. Generally, government across the world and particularly among high innovative countries invest large amounts (in excess of 1.00% of GDP) to ensure the constant generation of new knowledge and subsequent innovation. With the increased fund,

more depths and facets of the research and development (R&D) can be explored which could effectively forge the study into unexpected frontiers of innovation and culminate in more superior end products. In line with the new economic model of achieving high income developed economy, a radical shift in R&D allocation is not only appropriate but necessary. In view of this, the study found the need for increase in financing to SML firms to enhance their innovation base. This is in line with the findings of Ajagbe & Ismail (2014) in their study on the financing requirements for technology based small and medium firms. The study also reported that government could also revise upward the R&D allocation under the Tenth Malaysia Plan (10MP), in addition revise incentives for large corporations to spend on R&D with a view to make it more attractive. There is also need to increase grants and other financial aids to SML firms in general to undertake innovation activities such as R&D and make it a requirement for companies dealing with the government to spend on R&D and to innovate (Ismail & Ajagbe 2013a).

4.2 Knowledge Factors

Although the learning culture of SML organizations in Malaysia seemed to be contributing substantially towards the innovation in the firms, they should improve learning on these areas: by emphasizing on the empowerment of its personnel, and by encouraging dialogue and inquiry to occur among organizational members. It is argued that the present study can be developed further by examining the effects of the two sets of independent variables on separate innovation constructs that is technological innovation and organizational innovation. Bruque & Moyano (2007) mentioned that in the fast-changing and increasingly competitive global market SML firms which exert a strong influence on the economies of many countries through their ability to innovate new products and processes, have been the engine of economic growth and technological progress. The ongoing globalization process highlights the importance of innovation in all sectors (Watkins, 1996; Drucker, 1988). However, innovations for SML are becoming more complex (Eveleens 2010; Argyris & Schon 1978). For SML firms networks that lead to an increasing interaction between different actors represent a complementary response to insecurity arising from development and use of technologies. Beer & Nohria (2000) posit that it is necessary for firms to link different companies, research facilities, suppliers and customers in a dense innovation network that enables them to share knowledge and profit from harmonizing competencies. He added that the universal concept of ‘‘open innovation’’ brings about challenges for firms in developing countries which try to reduce the gap between their base of knowledge and technology and that of developed countries. However, interestingly, innovations are result of efforts of the best brains equipped with the best infrastructure. Innovative countries are aggressively producing educated labor force which includes top scientists and managers. Brilliant students are sponsored to pursue post-graduate courses both domestically and abroad. Malaysia is trying to emulate such moves to ride on innovation to become a high income economy in no distant time. In order to attain this feet, authors suggest that concerted effort should be made to raise the number of knowledge skill workers with innovative capabilities. They could also embark on a gigantic program of sponsoring students to study at the top notch universities to pursue post-graduate courses possibly up to the PhD level. This moves will make it possible to train adequate and capable personnel to work at the technical levels and encourage intensively foreign professionals to work in Malaysia as a temporal measure.

4.3 Market Factors

Promoting a competitive market is the most logical option of achieving high level of innovation toward a high income developed economy. With the ever increasing demands and shortages of skilled workers to operate the various industries, it is imperative that local companies play the role of innovation and catalysts of change to propel and safeguard their business ventures. It was also highlighted that all government purchases need to be done through competitive and transparent bidding, awards of research grants and other financial facilities be revised and improved to avoid abuse, the practice of government procurement toward enhancing innovation be developed. There is need to be more aggressive in persuading the private sector into doing more research and development, government needs to provide incentive for innovating companies in the form of tax exemption. They could also grant awards, recognition and met out suitable punishment in the form of withdrawal of license and monetary penalties for not meeting innovation requirements. However, for an innovation to be commercially successful, its product must be accepted by the market. Market acceptance depends not only on the product but also the marketing strategies and efforts of the organizations concerned (Barthelomew & Smith 2006). Some products require longer period of introduction, familiarization and acceptance due to their newness or unique, peculiar or unusual features, usage or characteristics. Therefore, it is necessary for policy makers to provide every support for worthy innovation products. The authors suggest that to further increase purchase of innovative products by the government, provide marketing support for new innovative products and provide initial financial aid for the products to take off.

4.4 Organizational Factors

The study finds that it is important for local and foreign organizations to look into ways of improving organizational climate which would encourage more innovation activities among employees by emphasizing incentive schemes to employees who bring up ideas that are creative. Majaro (1988) & Chesbrough (2007) opine that changing the climate to one which is creative, is one of the most difficult but essential tasks to do for top management. However, the manufacturing and service organizations should endeavor to do this. Even though the learning culture present in some firms seemed to be contributing substantially towards the innovation activities in such organizations, the organizations should be improving learning on these areas: by giving emphasis in giving more empowerment to its members, and by encouraging dialogue and inquiry to occur among the members.

4.5 Regulator and Policy Factors

The policy makers should encourage domestic firms to acquire knowledge as a faster avenue to greater innovation. This is because knowledge for innovation can come from internal and external sources with which companies can harness their innovation knowledge either within their firms or groups, external sources and provides vast amount of useful knowledge. With this, certain highly controlled, specialized yet pertinent, useful information to researchers and market players in the field of innovation can be gained through formal means and restricted circulation. In connection to this findings, Eveleens (2010) argued that government agencies are expected to play active role in identifying and providing access to external body of knowledge. Ee Shiang & Nagaraj (2011) opined that they are supposed to make available the necessary facilities including financial aid for SML to acquire external scientific knowledge and technology, and to further improve the ease of doing business in Malaysia to attract foreign firms to invest in R&D in Malaysia and to collaborate with domestic companies.

4.6 Other Factors

This research finds that there are other factors that may hinder innovation activities in Malaysia. For example, OECD (2010) reported that information about innovation is central to the success of innovation activities. The means and methods through which information collected and made available for usage by companies for innovation activities is of utmost importance. This is also essential for research studies on innovative activities within the country. The dissemination of this vital knowledge is just as important in catalyzing innovations as the initiative to follow through with information made available. The information is also needed to measure the levels of innovation. However, this particular research suggest that government should create more awareness on innovation as a means for virile nation, establish a Central Innovation Data Bank to help stakeholders and other interested parties access needed innovation related information. They could also support in the coordination of the data gathering and dissemination efforts and MASTIC should continue conducting on regular basis the S&T, R&D and NSI surveys.

5. Conclusions

The results reported above discussed on the barriers hindering innovation activities in Malaysia. They are grouped under six subheadings namely cost factors to include; cost too high, lack of funds within the organizations, lack of finance from sources outside the organizations and excessive perceived risk. While for the knowledge factors; the researchers reported such dimensions as lack of qualified personnel, lack of information on technology, lack of information on markets, difficulties in finding cooperation partners for innovation and finally weakness of intellectual property knowledge and rights. The third factor is the market factors; which indicate that the market is dominated by established enterprises, there are uncertain demand for innovative goods and services and that the innovation is easy to imitate. The fourth factor that hinder innovation activities as reported in this study are that the attitude of personnel towards change is not encouraging, including the attitude of managers towards change, managerial structure of the enterprise is another important dimension, also inability to devote staffs to innovation activities due to production requirement, lack of infrastructure such as building, lack of facilities such as machines, equipment, and lack of networking with research institutions like universities, SIRIM, FRIM, PORIM etc. The fifth factor includes regulator factors and public policy such as insufficient flexibilities of regulation or standards, limitation of science and technology public policies. Finally there are other important factors listed as no need to innovate as a result of earlier innovations and because there are inadequate demand for innovations.

In summary, it can be concluded that for this particular study, the identification of the barriers to innovation activities in Malaysia as revealed among the SML in the manufacturing and services industry makes a more significant contribution towards explaining innovation activities in the country. However, there was a considerable amount of significant contribution from the creative climate factors towards innovation as shown in the multiple regression analysis in the data analysis section of this study. This showed that there was a certain

amount of creativity present within participants which contributed to innovation. This creativeness was mostly generated by having a challenging environment and a climate of trust and openness present in the organizations. A climate of challenge and motivation provides emotional involvement of the members of the organizations in the operations and goals as what Eveleens (2010) has described. Giving employees opportunities to find and solve challenging problems and implement solutions intrinsically rewards their need for achievement. A climate of trust and openness provides emotional safety in relationships where everyone in the organization dares to put forward ideas and opinions in the presence of high level of trust (Cox *et al.* 2002; Barthelomew & Smith 2006).

Acknowledgement:
The researchers wish to thank the Universiti Teknologi Malaysia and Covenant University Ota, Nigeria for making available some of the facilities that enhanced the compilation of this study.

*Corresponding Author: Dr. Musibau Akintunde Ajagbe (ajagbetun@yahoo.com or akintunde.ajagbe@cu.edu.ng) is from the Centre for Entrepreneurship Development Studies (CEDS), Covenant University, Canaan Land, Ota, Nigeria.

References

Ajagbe, A.M. (2014), Funding Criteria in Technology Based Firms in Malaysia. An Unpublished PhD Thesis Submitted to the Graduate School, Universiti Teknologi Malaysia.

Ajagbe, A.M., K. Ismail, S.A. Aslan, W.D. Thwala & Long, C.S. (2013), Selection Criteria for Financing Young Firms Using Debt Options. Frontiers of Business, Management and Economics: An *Interdisciplinary Collection of Managerial Research Findings and Breakthroughs*. Edited by Mehran Nejati, pp. 265-269.

Ajagbe, A.M. & Ismail, K. (2014), Factors Influencing Venture Capital Assessment of High Growth Companies in Malaysia. *International Journal of Entrepreneurship and Small Business,* **21**(4), 457-494.

Ajagbe, A.M. & Ismail, K. (2013), Venture Capital in Malaysia: A Case Study of Malaysian Venture Capital Berhad (MAVCAP). *Australian Journal of Basic and Applied Sciences,* **7**(10), 368-375.

Ajagbe, A.M. & Ismail, K. (2013), Technology Based Firm Financing: How Venture Capital Nurture Firms. *Australian Journal of Basic & Applied Sciences,* **7**(12), 18-25.

Argyris, C. & Schon, D.A. (1978), Organizational Learning: A Theory of Action Perspective, Addison-Wesley Publishing Company, Inc., Reading, MA.

Axtell, C.M., Holman, D.J., Unsworth, K.L., Wall, T.D. & Waterson, P.E. (2000), "Shop floor innovation: facilitating the suggestion and implementation of ideas", *Journal of Occupational & Organizational Psychology,* **73**(3), 265-86.

Beer, M. & Nohria, N. (2000), "Cracking the code of change", *Harvard Business Review,* **78**(3), 133-42.

Bartholomew, S. & Smith, A.D. (2006), Improving survey response rates from chief executive officers in small firms: the importance of social networks. *Entrepreneurship Theory and Practice*, **30**(1), 83-96.

Cox, H., Frenz, M., & Prevezer, M. (2002), Patterns of Innovation in UK Industry: Exploring the CIS Data to Contrast High and Low Technology Industries. *Journal of Interdisciplinary Economics*, **13**(1, 2, 3), 267-304.

Chesbrough, H. (2007), Business model innovation: it's not just about technology anymore. *Strategy & leadership*, **35**(6), 12-17.

Davis, D. (2000), Business Research for Decision Making, 5th ed., Duxbury, Pacific Grove, CA.

Drucker, P. (1988), "The coming of the new organization", Harvard Business Review on Knowledge Management, January-February, pp. 1-20.

Ekvall, G. & Tangeberg-Anderson, Y. (1986), "Working climate and creativity: a study of an innovative newspaper", Journal of Creative Behavior, pp. 215-25.

Eveleens, C. (2010), Innovation management; a literature review of innovation process models and their implications. *Science*, 800, 900.

Ee Shiang, L. & Nagaraj, S. (2011), Impediments to innovation: evidence from Malaysian manufacturing firms. *Asia Pacific Business Review*, **17**(02), 209-223.

GCR (2013), The Global Competitiveness Report (2012-2013). Full Data Edition. World Economic forum, Geneva, Retrieved from www.weforum.org/gcr.

GII (2012), Global Innovation Index. Stronger Innovation Linkages for Global Growth, Chapter-1, pp: 3-41.

Gellatly, A., Cole, G. & Blurton, A. (1999), Do equiluminant object onsets capture visual attention? *Journal of Experimental Psychology: Human Perception and Performance*, **25**(6), 1609.

Geroski, P., Machin, S. & Van Reenen, J. (1993), The profitability of innovating firms. *Rand Journal of Economic*, **24**(2), 198–211.

IDR (2011), The Innovation for Development Report (2010-2011). Innovation as a Driver of Productivity and Economic Growth. European Business School. Retrieved from, http://www.innovationfordevelopmentreport.org/ici.html.

Ismail, K. & Ajagbe, A.M. (2013), The Roles of Government in the Commercialization of Technology Based Firms. *Middle East Journal of Scientific Research*, **16**(2), 229-236.

Ismail, K. & Ajagbe, A.M. (2013), The Nurturing Roles of Venture Capital Firms and how they help the Sustenance of Tech Businesses. *Middle-East Journal of Scientific Research*, **16**(2), 156-163.

Khairuddin, I. (1999), "Organizational learning experiences in Malaysian firms moving toward globalization", doctoral dissertation, University of Georgia.

Mohanty, R.P. (1999), "Value innovation perspective in Indian organizations", *Participation and Empowerment: An International Journal*, **7**(4), 1-10.

Majaro, S. (1988), The Creative Gap: Managing Ideas for Profit, Longman, London.

Majaro, S. (1992), Managing Ideas for Profit: The Creative Gap, McGraw-Hill, London. Malaysian Science and Technology Information Centre (1996), 1994 National Survey of Innovation in Industry, Ministry of Science, Technology and the Environment, Malaysia.

Miozzo, M and Wlsh, V. (2006), International Competitiveness and Technological Change, Oxford University Press.

NECA, (2010), National Economic Advisory Council: Human Development Report (20th Anniversary Edition), published by United Nation Development Programme (UNDP).

Nonaka, I. & Takeuchi, H. (1995), The Knowledge Creating Company: How Japanese Companies Foster Creativity and Innovation for Competitive Advantage, Oxford University Press, New York, NY.

Oslo Manual (2005), Guidelines for Collecting and Interpreting Innovation Data (3rd Edition): A Joint Publication for OECD and EUROSTAT. 1-166.

OECD (2010), OECD Studies on SMEs and Entrepreneurship SMEs, Entrepreneurship and Innovation, OECD Publishing, 85, 2010.

OECD (2005), *Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data* (3rd ed.). Paris: OECD

Sta. Maria, R.F. (2000), "Perception of learning culture, concerns about the innovation, and their influence on use of an on-going innovation in the Malaysian public sector", doctoral dissertation, University of Georgia, Athens, GA.

WIPO, (2012) Economics and Statistics Division, WIPO Publications. Retrieved from, http://www.wipo.int/ipstats/en/statistics/patents/

Watkins, K.E. (1996), "Of course organizations learn!", in Rowden, R.W. (Ed.), New Directions for Adults and Continuing Education: *Workplace Learning*, **1**(72), 89-96.

Watkins, K.E. & Marsick, V. (1996), Dimensions of the Learning Organization Questionnaire, Partners of the Learning Organization, Warwick, RI.

Authors Profile

Dr. M. A. Ajagbe is affiliated to the Centre for Entrepreneurship Development Studies (CEDS) under the Department of Business Management, Covenant University, Nigeria. He has about 9 years industry experience in field sales and marketing where he rose to the position of Regional Manager. He also has about 7 year's active experience in teaching and academic research. Dr. Ajagbe bagged his Doctoral Degree in Management (Technology Entrepreneurship) from Universiti Teknologi Malaysia in 2014. He obtained an MBA in Marketing Management from Ambrose Ali University Ekpoma, Nigeria in 2007. He became an Associate Member of the Nigeria Institute of Management (Chartered), Associate Member of the National Institute of Marketing of Nigeria, and currently a Fellow with the Chartered Institute of Entrepreneurship and Corporate Governance in 2014.

Associate Professor Dr. K. Ismail has extensive experience in research commercialisation and spin-off companies. She obtained her PhD in Entrepreneurship from the University of Strathclyde in 2007, specifically studying Commercialisation of University Patent. She is actively involved in innovation in SMEs and technology entrepreneurship research and activities. She was the Deputy Director in the Innovation and Commercialisation Centre, Universiti Teknologi Malaysia and currently the Director to the UTM Technology Entrepreneurship Center (UTMTEC).

D. T. Isiavwe is a General Manager at Union Bank of Nigeria Plc and is currently the Chief Internal Auditor of the Bank. He is also the current President and Chairman Board of Trustees of the Information Security Society of Africa, Nigeria (ISSAN), a not-for-profit organization. David also used to be the Deputy Managing Director and Chief Operating Officer of Banque Internationale Du Burkina (BIB) - in Burkina Faso, West Africa. He is currently pursuing a Ph. D degree in Accounting at Igbinedion University Okada, in Nigeria. David holds a Bachelor's degree from the University of Benin as well as a Master degree from the University of Lagos where he graduated with **Distinction** at the **M. Sc. Accounting** class. He is a Fellow of the Institute of Chartered Accountants of Nigeria **(FCA);** an Honorary Fellow of the Chartered Institute of Bankers of Nigeria **(HCIB)** and is a Certified Information Systems Security Professional **(CISSP)** as well as being Certified in the Governance of Enterprise Information Technology **(CGEIT)** by the Information Systems Audit and Control Association of the United States of America **(ISACA).**

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar